

## Using the Density Formula

### Review

Remember density is a physical property of matter. Each element and compound has a unique density associated with it.

The formal definition of density is mass per volume and is generally measured in grams per milliliter (g/mL) or grams per cubic centimeter (g/cm<sup>3</sup>).

The formula for density is: **Density = mass/volume**

With some algebra, the formula can be manipulated in several different ways including:

Volume = mass/density or Mass = density X volume

### Examples

<b>Density</b>		
If you had an object with a mass of 100 g that takes up 10 mL of space, what would the density be?		
To answer, choose the correct formula, plug in the numbers, and solve.		
Density = mass/volume	Density = 100 g / 10 mL	Density = 10 g/mL

  

<b>Volume</b>		
If an object has a mass of 100 g and a density of 20 g/cm <sup>3</sup> , what is the volume?		
To answer, choose the correct formula, plug in the numbers, and solve.		
Volume = mass/density	Volume = 100 g / 20 g/cm <sup>3</sup>	Volume = 5 cm <sup>3</sup>

  

<b>Mass</b>		
If an object has a volume of 100 mL and a density of 10 g/mL, what is its mass?		
To answer, choose the correct formula, plug in the numbers, and solve.		
Mass = volume X density	Mass = 100 ml X 10 g/mL	Mass = 1000 g